

Einladung zum Würzburger Mathematischen Kolloquium

Julius-Maximilians-Universität Würzburg • Fakultät für Mathematik und Informatik

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Modeling, analysis and simulation of biological systems

Mittwoch, 30. Mai 2018 • 16:15 Uhr

Raum SE 40, Mathematik Ost, Emil-Fischer-Str. 40, Campus Hubland-Nord

Inhaltsangabe:

In this presentation, we are dealing with the mathematical modelling and simulation of processes in the early stage of atherosclerosis. In this context, a crucial role is played by the endothelial layer which forms an interface between the lumen of the blood vessel and the vessel wall. The endothelial layer is a selective membrane which controls the exchange of substances and water between blood and arterial wall. The derivation of transmission conditions across this layer plays an important role in the modeling process.

In the first part of the talk, we propose a mathematical model for the early atherosclerosis, in which the transmission conditions across the endothelial layer are formulated heuristically. Mathematical simulations show that the model reproduces essential features found in experimental investigations. In the second part, we give an insight into the rigorous derivation of effective transmission conditions across interfaces by using the methods of asymptotic analysis and homogenization.



www.mathematik.uni-wuerzburg.de/kolloquium/

Zu diesem Vortrag laden wir Sie herzlich ein.
Im Anschluss an den Vortrag stehen Tee und Kaffee im Foyer vor dem SE 40 bereit.

Die Dozentinnen und Dozenten der Mathematik

